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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

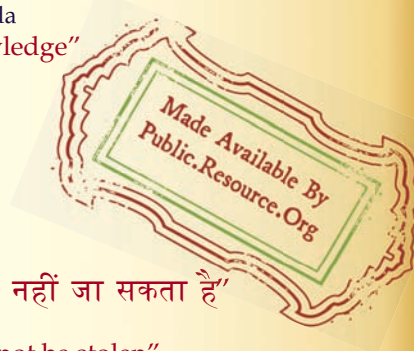
IS 8481 (2005): Oxidation Hair Dyes Liquid [PCD 19: Cosmetics]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
खिजाब, तरल, जैल और क्रीम — विशिष्टि
(तीसरा पुनरीक्षण)

Indian Standard
OXIDATION HAIR DYES, LIQUID, GEL AND
CREAM — SPECIFICATION
(*Third Revision*)

ICS 71.100.70

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cosmetics Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

In general hair dyes may be broadly classified as powder hair dyes and liquid, gel and cream hair dyes. The requirements pertaining to powder hair dyes are covered in IS 10350 : 1999 'Specification for powder hair dyes (second revision)'.

Liquid, gel and cream hair dyes, however, may be further classified into the following types:

- a) Oxidation hair dye, liquid, gel and cream;
- b) Lead salt based hair darkener;
- c) Emulsion type hair dye; and
- d) Vegetable based hair dye.

This standard covers only liquid, gel and cream oxidation hair dyes based on para-phenylenediamine (PPD)/aryl amine. Emulsion type hair dye is covered in IS 15205 : 2002 'Oxidation hair dyes (emulsion type) — Specification'. Other types of hair dyes and hair darkener will be covered separately when considerable data is available. The manufacturer is at liberty to describe his 'Hair Dye' product as 'Hair Colour' or 'Hair Colourant', since 'Hair Dye', 'Hair Colour' and 'Hair Colourant' are synonyms.

This standard was first published in 1977. In the first revision, two types of oxidation hair dyes, on the basis of shades in vogue in the country were incorporated. In addition, requirement for PPD was revised, specifying a range, thereby prescribing a lower as well as an upper limit for PPD content. Fixing of lower limit for PPD content was considered essential in order to safeguard consumer's interest to enable him to get a dye that would perform and is money's worth whereas upper limit was fixed to allow only a safe dye in the market.

Also, a new requirement for PPD in the dye, ready for use prepared after formulation with developer as per manufacturer's instructions, was prescribed with a procedure to calculate the same. Marking clause was elaborated, according to which it was made mandatory for the manufacturers to declare PPD content in liquid dye, instructions for preparation of dye ready for use, besides warning, declaration of other relevant information and precautions. "Best use before....." was prescribed as a regular requirement and declaration of list of key ingredients on the carton/package of dyes was made compulsory, in line with other cosmetic formulations.

In the second revision, requirement of PPD content in the dye was modified. Accordingly, requirement for calculated active matter was also modified for Type 2. The requirement for assay (as H_2O_2) for developer was also modified keeping in view the latest technological development in the field. Modifications were also made in the marking clause.

A scheme for labelling environment friendly product as known as ECO-Mark was introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO-Mark is being administered by the Bureau of Indian Standards (BIS) under the *Bureau of Indian Standards Act, 1986* as per the Resolution No. 71 dated 21 February 1991 and No. 768 dated 24 August 1992 published in the Gazette of the Government of India. For a product to be eligible for marking with ECO logo it shall also carry the Standard Mark of BIS besides meeting additional environment friendly requirements. For this purpose, the Standard Mark of BIS would be a single mark being a combination of the BIS monogram and the ECO logo. Requirements for ECO friendliness will be additional, manufacturing units will be free to opt for Standard Mark alone also.

In this standard, a new classification of colours, namely, Type 3 (others) has been added in order to cover the range of fashion hair colours (both for grey and virgin black hair). Type 3 class of hair colours covers an entire range of colours like black, brown, red, blonde, purple, etc, which could be formulated with nil or significantly lower levels of para-phenylenediamine /and /or by using other permissible dye intermediates (aminophenols, resorcinol, and any other permitted dye chemicals; and their derivatives) as substitutes. The extent of colouration, or colour impact, for the Type 3 range of colours could vary, and could be substantially different from Type 1

(Continued on third cover)

Indian Standard

OXIDATION HAIR DYES, LIQUID, GEL AND CREAM — SPECIFICATION

(Third Revision)

1 SCOPE

This standard prescribes the requirements and the methods for sampling and test for oxidation hair dyes, liquid, gel and cream.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water (<i>third revision</i>)
3958 : 1984	Methods of sampling cosmetics (<i>first revision</i>)
4011 : 1997	Methods of test for safety evaluation of cosmetics (<i>second revision</i>)
4707	Classification of cosmetic raw materials and adjuncts:
(Part 1) : 2001	Dyes, colours and pigments (<i>second revision</i>)
(Part 2) : 2001	List of raw materials generally not recognized as safe for use in cosmetics (<i>second revision</i>)

3 TYPES

There are three types of dyes:

- a) Type 1 — Black;
- b) Type 2 — Brown; and
- c) Type 3 — Others (covers an entire range of fashion hair colours like black, brown, red, blonde, purple, etc).

4 REQUIREMENTS

4.1 Description

The oxidation hair dye, liquid, gel and cream normally consists of two parts, namely, (a) the dye, and (b) the developer, which are supplied in separate containers.

4.2 Ingredients

Unless specified otherwise, all the raw materials; used in the manufacture of oxidation hair dye, liquid, gel and cream shall conform to the requirements prescribed in the relevant Indian Standards where such standards exist.

4.3 Ingredients of dye shall comply with the provisions of IS 4707 (Part 1) and IS 4707 (Part 2) subject to the provisions of the *Drugs and Cosmetics Act*, 1940 and rules framed thereunder.

4.4 Dye

The active ingredient in Type 1 hair colour is usually an arylamine dispersed in a suitable surface active agent in an alkaline medium. Type 2 hair colour may contain other dye chemicals like ortho amino phenol, para amino phenols, etc, besides arylamine. It may contain suitable modifiers such as resorcinol. Type 3 hair colour may be formulated with nil or significantly lower levels of para-phenylenediamine and/or phenylenediamine including their N-substituted derivatives and their salts, Toluenediamine and derivatives and their salts, other permissible dye intermediates, couplers and modifiers, aminophenols, resorcinols, and all permitted dye chemicals; and their derivatives.

The dye shall comply with the requirements given in Table 1 when tested according to the methods given in Annex A, B, D and E.

4.5 Developer

The developer is an oxidizing agent, usually a dilute solution of hydrogen peroxide, or may be developed using permissible fatty substances and emulsifiers, free from any foreign matter and suitably stabilized. It shall comply with the requirements given in Table 2 when tested according to methods given in Annex A and C.

4.6 Dye Ready for Use

The dye ready for use is prepared after mixing the dye content and developer in the proportion recommended by the manufacturer in the leaflet which is inserted in the container packing of the dye and developer, or may be printed on the carton itself, as the case may be.

The mixing ratio of the dye-to-developer may be in the range of 1 : 0.5 - 3.0. that is Dye : Developer mixing ratio could be 1 : 0.5/1 : 1.0/1 : 1.5/1 : 2.0/1 : 2.5/1 : 3.0.

The procedure for calculation of PPD content in solution after recommended dilution with developer is as follows:

If PPD content in liquid/cream hair dye is = x percent and manufacturer recommends that 1 part of dye may be mixed with y part of developer, then PPD content in the dye ready for use is :

$$= \frac{x}{y + 1}$$

4.7 Additional Requirements for ECO-Mark

4.7.1 General Requirements

4.7.1.1 The product shall conform to the requirements for quality, safety and performance prescribed under 4.1 to 4.6.

4.7.1.2 All the ingredients that go into formulation of cosmetics shall comply with the provisions for IS 4707 (Part 1).

4.7.1.3 The material used for product packaging shall be recyclable, reusable or biodegradable.

4.7.1.4 The product package shall display a list of ingredients in descending order of quantity present.

4.7.1.5 The product shall not be manufactured from any carcinogenic ingredients.

4.7.1.6 The manufacturer shall produce to BIS the environmental consent clearance from the concerned State Pollution Control Board as per the provisions of *Water (Prevention & Control of Pollution) Cess Act, 1977* and *Air (Prevention and Control of Pollution) Act, 1981* alongwith the authorization, if required under *Environment (Protection) Act, 1986* and Rules made thereunder while applying for ECO-Mark. Additionally, provision of the *Drugs and Cosmetics Act, 1940* and the Rules thereunder shall also be complied with.

4.7.1.7 The product package shall be suitably marked that ECO-Mark label is applicable only to the contents, if the product package is not separately covered under the ECO-Mark scheme.

4.7.1.8 The product package shall display in brief the criteria based on which the product has been labelled environment friendly.

4.7.1.9 The material for product packaging shall meet the parameters evolved under the scheme of labelling environment friendly packaging/package materials.

4.7.2 Specific Requirements

4.7.2.1 Product shall be dermatologically safe when tested as prescribed in IS 4011.

4.7.2.2 Heavy metals calculated as lead (Pb) and arsenic as (As_2O_3) shall not exceed 20 and 2 ppm, respectively when tested by the respective method prescribed in Indian Standards.

5 PACKING AND MARKING

5.1 Packing

The dye and the developer shall be filled separately in amber coloured glass bottles and properly capped. Other suitable containers may also be used. The developer may also be filled in suitable plastic containers. The two are packed in the same carton. The bottles and the carton shall be suitably labelled.

5.2 Storage

The material shall be stored in a cool, dark place.

5.3 Marking

Each container (pouch/glass bottles, etc) and the package (carton/box) containing the material shall be marked with the following information:

- Name of the material;
- Indication of the source of manufacture;
- Warning 'Shall not be used for dyeing eyelashes or eyebrows'; 'keep away from children';
- Declaration 'Maximum arylamine (PPD) content after dilution as per manufacturer's instructions for use' (To be declared by manufacturer);
- Net content;
- Shade of dye;
- Best use before ... (Month and year to be declared by the manufacturer)¹⁾; and
- Any other information required by statutory authorities.

In addition to the above, the following information shall also be given in the attached leaflet:

- Procedure for conducting preliminary test for sensitivity (patch test),
- Instructions for use, and
- List of key ingredients²⁾

¹⁾ This is exempted in case of :

- Small packings of 10 g or 25 ml, and
- Products with shelf life of more than 24 months.

²⁾ This is exempted in case of pack size of 30 g/60 ml or less.

5.3.1 BIS Certification Marking

The product may also be marked with the Standard Mark.

5.3.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

5.4 Caution

para-Phenylenediamine may cause skin irritation in certain cases, so a preliminary test according to the accompanying direction shall first be made (*see 5.4.1*). The material shall not be used for dyeing the eyelashes or eyebrows, as its use may cause blindness.

5.4.1 Each package shall contain instructions in English and local languages on the following lines for carrying out the test:

‘para-Phenylenediamine containing preparations may cause serious inflammation of the skin in some cases and so a preliminary test should always be carried out to determine whether or not special sensitivity exists. For carrying out the test, cleanse a small area of skin behind the ear or upon the inner surface of

the forearm, using either soap and water or alcohol. Apply a small quantity of the hair dye as prepared for use to the area and allow it to dry. After 24 h, wash the area gently with soap and water. If no irritation or inflammation is apparent, it may be assumed that no hypersensitivity to the dye exists. The test should, however, be carried out before each and every application. This preparation should on no account be used for dyeing eyebrows or eyelashes as severe inflammation of the eye or even blindness may result’.

6 SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed in IS 3958.

6.2 Test for all characteristics shall be carried out on the composite sample.

6.3 The material shall be taken to have confined to the specification if the composite sample passes all the tests.

7 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — ‘Pure chemicals’ shall mean chemicals that do not contain impurities which affect the results of analysis.

Table 1 Requirements for Dye
(Clause 4.4)

Sl No.	Characteristic	Requirement			
		Type 1 (Black)	Type 2 (Brown)	Type 3 (Others)	Method of Test, Ref to Annex
(1)	(2)	(3)	(4)	(5)	(6)
i) pH		9.0-11.0	9.0-11.0	6.0-11.0	A
ii)	Active matter as PPD content, percent by mass (including toluenediamine and derivatives and their salts, <i>m</i> - and <i>p</i> -phenylenediamines, their N-substituted derivatives and their salts, and N-substituted derivatives of <i>o</i> -phenylene diamines)	2.5-4.0	1.0-3.0	3.0, <i>Max</i>	B or D
iii)	Dye ingredients (includes lower or nil levels of PPD and/or phenylenediamine including their N-substituted derivatives and their salts, Toluenediamine and derivatives and their salts, other permissible dye intermediates, couplers and modifiers, aminophenols, resorcinols, and all permitted dye chemicals; and their derivatives)	—	—	Present	D or E

Table 2 Requirements for the Developer
(Clause 4.5)

Sl No.	Characteristic	Requirements	Method of Test, Ref to Annex
(1)	(2)	(3)	(4)
i)	pH	1.8-4.0	A
ii)	Assay (as H ₂ O ₂), percent by mass (m/m), Max	12.0, Max	C

ANNEX A

[Clauses 4.4 and 4.5, Tables 1 and 2, Sl No. (i)]

DETERMINATION OF pH

A-1 APPARATUS

2°C using the pH meter .

A-1.1 pH Meter — preferably equipped with glass electrode.

A-2.2 For Developer

A-2 PROCEDURE

Take 15 ml of the developer and determine its pH at 27 ± 2°C using the pH meter.

A-2.1 For Dye

Take 15 ml of the dye and determine its pH at 27 ±

ANNEX B

[Clause 4.4, Table 1, Sl No. (ii)]

DETERMINATION OF ARYLAMINE CONTENT

B-1 OUTLINE OF THE METHOD

This method estimates arylamine as diacetyl derivative of arylamine.

B-2 APPARATUS

B-2.1 Continuous Extraction Apparatus — as in Fig. 1.

B-2.2 G4 Sintered Glass Crucible

B-2.3 Beaker — 100 ml capacity.

B-3 REAGENTS

B-3.1 Chloroform — laboratory reagent grade.

B-3.2 Acetic Anhydride — analytical reagent grade.

B-4 PROCEDURE

Transfer accurately weighed quantity (about 5 g) of liquid hair dye, so as to contain 0.1 to 0.3 gm para-phenylenediamine, to the inner tube of the continuous extractor, previously charged with chloroform. Take

60 ml chloroform in the flask and completely extract the dye. About 5 h extraction is sufficient. Remove the flask and transfer chloroform extract to a 100 ml beaker, rinsing the flask with few small portions of chloroform. Evaporate chloroform to about 25 ml and add 1 ml acetic anhydride slowly, with stirring. Let it stand for 1 h and filter on a weighed G4 sintered glass crucible. Wash the beaker and precipitate with three or four 5-ml portions of chloroform. Carefully remove last traces of precipitate from the beaker. Dry to constant mass at 120°C and weigh the precipitate of diacetyl para-phenylenediamine C₆H₄ (NHCOCH₃)₂.

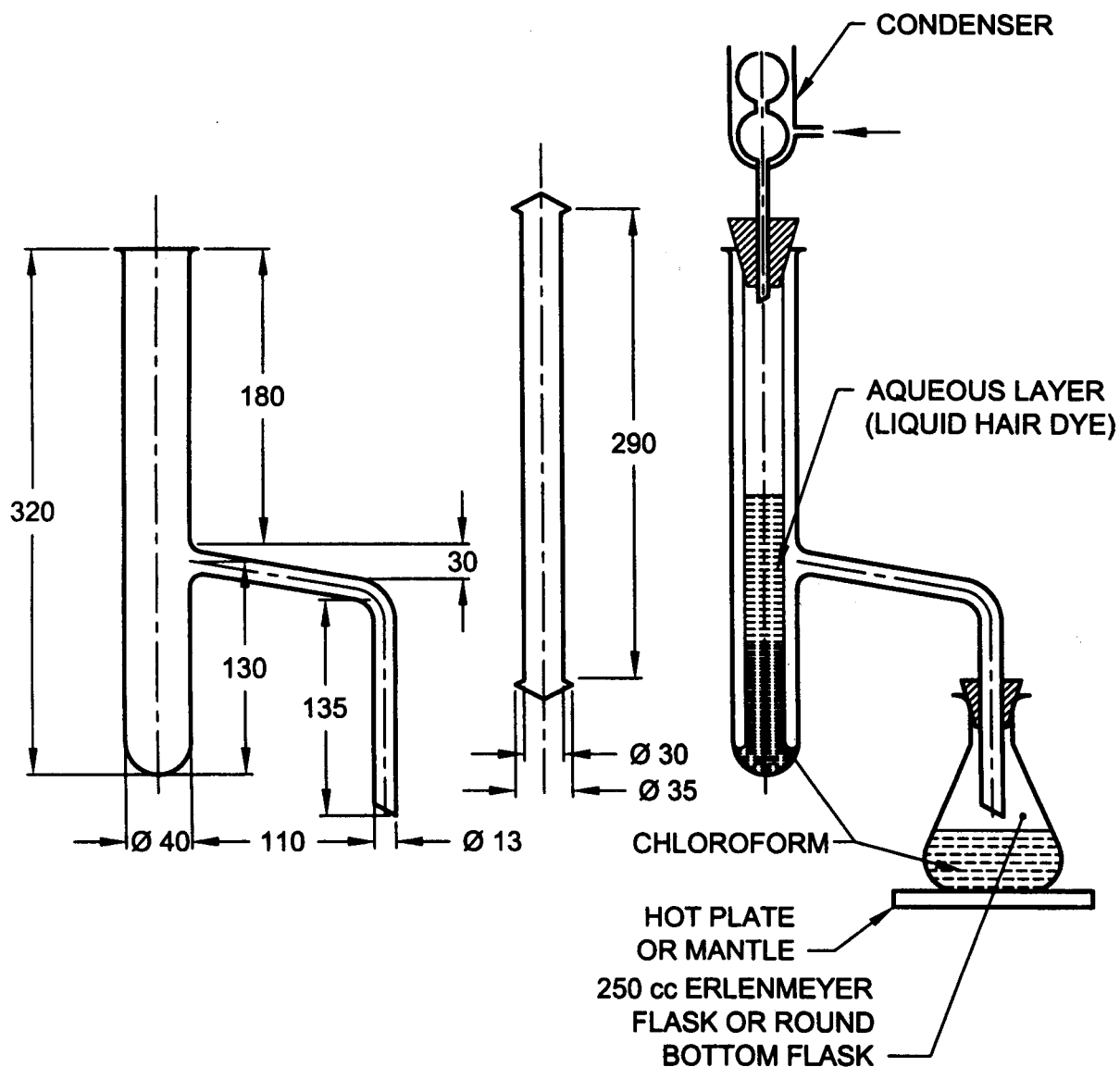
B-5 CALCULATION

Arylamine content
(as para-phenylenediamine) =
$$\frac{m \times 0.5626 \times 100}{M}$$

where

m = mass, of the precipitate, in g; and

M = mass, of the hair dye taken for extraction, in g.



All dimensions in millimetres.

FIG. 1 CONTINUOUS EXTRACTION APPARATUS

ANNEX C

[Clause 4.5, Table 2, Sl No. (ii)]

DETERMINATION OF HYDROGEN PEROXIDE CONTENT

C-1 REAGENTS

C-1.1 Dilute Sulphuric Acid

C-1.2 Potassium Permanganate Solution Freshly Standardized (N/10)

C-2 PROCEDURE

Weigh accurately about 10 g of the developer and dilute to 500 ml. Take 25 ml of the diluted solution in a conical flask, add 5 ml of sulphuric acid and titrate against potassium permanganate solution.

C-3 CALCULATION

$$\text{Assay, percent (m/m)} = \frac{V N}{M} \times 34.02$$

where

V = volume of potassium permanganate solution required for titration;

N = normality of potassium permanganate solution; and

M = mass of developer taken to prepare 500 ml solution, in g.

ANNEX D

[Clause 4.4, Table 1, Sl No. (ii) and (iii)]

ESTIMATION OF OXIDATIVE HAIR DYES IN COSMETIC FORMULATIONS

D-1 OUTLINE OF THE METHOD

Applicable to all cosmetic formulations containing oxidative dyes. The method describes a reverse phase gradient HPLC technique for the quantitative estimation of *o*-aminophenol, *N*, *N*, Bis-2-Hydroxyethyl-PPD sulphate, *p*-aminophenol and *p*-phenylenediamine.

D-2 REAGENTS

D-2.1 Mobile Phase

D-2.1.1 Mobile Phase (A)

- a) Soerensen buffer (buffer solution pH 8)
Add 440 ml of 0.1 M hydrochloric acid and 2 g L - Ascorbic acid sodium salt to 560 ml of 0.1 M sodium tetra borate decahydrate solution, mix and filter through 0.45 mm filter (ensure that the final pH is 8).

- b) Methanol HPLC grade
Mix 600 ml of (a) and 400 ml (b) to give mobile phase (A).

D-2.1.2 Mobile Phase (B)

A 0.05 M acetic acid solution is adjusted to a pH of 5.9 with 10 percent ammonia solution and filter through 0.45 mm filter (preserve at 4°C when not in use to prevent bacterial growth).

D-2.2 *n*-heptane

D-2.3 Standards — Dye chemicals like *p*-phenylenediamine, *N*, *N*, Bis-2 hydroxyethyl-PPD sulphate, Resorcinol, Aminophenols.

D-2.4 Column — Merck Lichrospher RP60 B (C8), 250 mm × 10 mm, 5 mm particle size.

D-2.5 RP HPLC Conditions

D-2.5.1 Gradient Elution Condition:

- a) 0-25 percent A for 19 min
- b) 25-80 percent A for 10 min
- c) 80 percent A for 5 min
- d) 85-95 percent A for 5 min
- e) 95 percent A for 3 min

D-2.5.2 Flow Rate — 1 ml/min.

D-2.5.3 Column Temperature, 48°C.

D-2.5.4 UV Detection at 220 nm, 235 nm and 290 nm.

D-3 PROCEDURE

D-3.1 Standard Solution

Weigh accurately about 0.1 g of each of the 4 standards into separate 100 ml beaker. Dissolve in mobile phase (A) and dilute to 100 ml in a standard volumetric flask with the same mobile phase and mix well (primary standard). Transfer to a series of 10 ml volumetric flasks 1.0, 2.0, 3.0, 4.0 and 5.0 ml of standards prepared

above and make up to volume with the mobile phase (A) and mix corresponding to concentration of 1.0, 2.0, 3.0, 4.0 and 5.0 mg /10 ml working standards

NOTE — Freshly prepared standards must be used.

D-3.2 Preparation of Mixed Standard

Transfer 1.0 ml of each primary standard solution to a 10 ml volumetric flask and mix.

D-3.3 Sample Solution

Weigh about accurately about 4.0 g of the sample in a 100 ml beaker, dissolve in buffer solution (A), transfer quantitatively to a 100 ml volumetric flask and make

up to volume with the same mobile phase and mix.

D-3.4 Extraction of Actives from the Sample

Transfer 2 ml of solution from D-3.2 to a 50 or 100 ml separator funnel. Add 20 ml *n* - Heptane, shake for 1 min and allow the liquid phases to separate. Inject the aqueous phase.

D-4 CALCULATION

Percent dye content =

$$\frac{\text{Concentration of standard in } \mu\text{g} \times \text{Sample area}}{100 \times \text{Standard area} \times \text{Weight of sample (g)}}$$

ANNEX E

[Clause 4.4, Table 1, Sl No. (iii)]

TLC METHOD FOR DETERMINATION OF THE PRESENCE OF DYE INGREDIENT

E-1 OUTLINE OF THE METHOD

This method determines the presence of the dye precursors/ingredients in hair colour.

E-2 APPARATUS

E-2.1 Weighing Balance

E-2.2 TLC Plates — Precoated silica gel 60 F₂₅₄, 0.2 mm thickness.

E-2.3 TLC Apparatus/Beakers — 250 ml (narrow).

E-2.4 Iodine Chamber

E-2.5 Test Tubes with Stoppers

E-2.6 Pipette — 10 ml.

E-2.7 Syringe — 5 or 10 ml capacity.

E-2.8 Silicone Wax

E-3 REAGENTS

E-3.1 Benzene, AR grade.

E-3.2 Ethyl Acetate, AR grade.

E-3.3 Methanol, AR grade.

E-3.4 Sodium Sulphite, AR grade.

E-3.5 Standards — Expected dye precursors/ingredients in the respective shade being analyzed.

E-3.6 Test Sample — 1 g of shade being tested.

E-4 PREPERATION OF SOLUTIONS

E-4.1 Mobile Phase

E-4.1.1 Benzene AR

E-4.1.2 Ethyl Acetate AR (3 : 7 v/v).

E-4.1.3 Take the solvents benzene AR and ethyl acetate AR in 3 : 7 v/v, mix well and keep stoppered.

E-4.2 Sample Solutions

Weigh accurately 1 g of sample from the shade being tested. Add a small quantity of sodium sulphite, add 4 ml of methanol AR and mix well. Use this solution for spotting.

E-4.3 Standard Solutions

Weigh quantity nearly sufficient of the standard dye precursors/ingredients expected in the respective shade being analyzed, add sodium sulphite and dissolve in 5 ml of methanol AR so that the concentration of each dye precursor is equivalent to its concentration in the sample solutions.

E-5 PROCEDURE

Pour 15-20 ml of mobile phase into the 250 ml narrow beaker (developing chamber) and cover with a suitable petri dish using silicone wax as a sealant.

Spot 1 µl of the test solution slowly on the TLC plate. Similarly spot the standard solutions as mentioned above. Allow spots to dry and develop in the developing chamber. Remove the TLC plate when the mobile phase reaches 0.5 cm away from the end of the TLC plate. Allow the plate to dry completely and develop the spots in an Iodine chamber. See and compare the R_f values, colour, shape and size of the sample spots *versus* the standard spots to identify and determine the presence of dye ingredients.

NOTE — If the concentration of some ingredient is too small for proper identification and characterization the sample and standard concentrations may be increased accordingly.

ANNEX F

(Foreword)

COMMITTEE COMPOSITION

Cosmetics Sectional Committee, PCD 19

<i>Organization</i>	<i>Representative(s)</i>
Directorate General of Health Services, New Delhi	SHRI ASHWINI KUMAR (<i>Chairman</i>)
All India Small Scale Cosmetic Manufacturer's Association, Mumbai	SHRI M. B. DESAI
	SHRI B. M. CHOPRA (<i>Alternate I</i>)
	SHRI S. CHATTERJEE (<i>Alternate II</i>)
Balsara Home Products, Mumbai	DR K. C. GOUNDEN
Bengal Chemicals & Pharmaceuticals Ltd, Kolkata	DR SAJAL K. ROY CHOWDHURY
	DR A. K. MANDAL (<i>Alternate</i>)
Cavinkare Ltd, Chennai	DR M. P. PRASAD
	DR G. V. RAO (<i>Alternate</i>)
Central Drugs Laboratory, Kolkata	DR M. K. MAZUMDER
	DR A. C. DAS GUPTA (<i>Alternate</i>)
Central India Pharmacopoeia Laboratory, Ghaziabad	DR SANTOSH K. TALWAR
	DR SUKOMAL DAS (<i>Alternate</i>)
Ciba Speciality Chemicals Private Limited, Gurgaon	SHRI RAJESH IYER
Consumer Education and Research Centre, Ahmedabad	DR C. J. SHISHOO
	SHRI Y. S. YELLORE (<i>Alternate</i>)
Consumer Guidance Society, Mumbai	DR A. R. SHENOY
	SHRI N. G. WAGLE (<i>Alternate</i>)
Colgate-Palmolive (India) Ltd, Mumbai	DR RAJ KOHLI
	SHRI SUNIL AGGARWAL (<i>Alternate</i>)
Dabur Research Foundation, Sahibabad	DR N. M. SUNDER
Food & Drugs Administration, Mumbai	SHRI A. RAMA KRISHNAN
	SHRI K. B. SHENDE (<i>Alternate</i>)
Food & Drugs Control Administration, Gandhinagar	DR B. N. PATEL
	SHRIMATI R. B. DESAI (<i>Alternate</i>)
Galaxy Surfactants Limited, Mumbai	SHRI U. SHEKAR
	SHRI GOPI RAMAN (<i>Alternate</i>)
Godrej Soaps Ltd, Mumbai	SHRI A. RANGARAJAN
	DR (SHRIMATI) ROHINI THAKKAR (<i>Alternate</i>)
Hindustan Lever Research Centre, Mumbai	SHRI V. R. DHANUKA
	SHRI N. S. BIJLANI (<i>Alternate</i>)
Hygienic Research Institute, Mumbai	SHRI M. B. DESAI
	SHRI MANISH K. CHHABRA (<i>Alternate</i>)
Indian Soaps and Toiletries Members Association, Mumbai	SHRI R. HARIHARAN
Johnson & Johnson Ltd, Mumbai	DR PRASHANT ABHYANKAR
	DR V. R. BAMBULKAR (<i>Alternate</i>)
Lady Amritbai Doga College, Nagpur	DR (SHRIMATI) S. B. KULKARNI
Le'Oreal India Pvt Ltd, Umbergaon, Gujarat	SHRI R. JAYARAJ
Maharishi Ayurved Products, Noida (U.P.)	DR S. C. SAXENA
	SHRI D. K. SHRIVASTAVA (<i>Alternate</i>)
Marico India Ltd, Mumbai	SHRI R. MOHILE
	SHRI BENEDICT M. (<i>Alternate</i>)
Mayar India Limited, Delhi	DR S. ADHIKARI
Procter & Gamble (India), Mumbai	SHRIMATI SHWETA PURANDARE
Shingar Ltd, Mumbai	SHRI V. K. SINGH
	SHRIMATI SWATI SINGH (<i>Alternate</i>)
BIS Directorate General	DR (SHRIMATI) VIJAY MALIK, Director & Head (PCD) [Representing Director General (<i>Ex-officio</i>)]

Member Secretary
SHRIMATI NAGAMANI T
Assistant Director (PCD), BIS

Composition of Hair Care Products Subcommittee, PCD 19 : 2

<i>Organization</i>	<i>Representative(s)</i>
Godrej Soaps Ltd, Mumbai	DR (SHRIMATI) ROHINI THAKKAR (<i>Convener</i>) SHRI A. RANGARAJAN (<i>Alternate</i>)
Bengal Chemicals & Pharmaceuticals Ltd, Kolkata	DR S. K. ROY CHOWDHURY DR A. K. MANDAL (<i>Alternate</i>)
Cavinkare Ltd, Chennai	DR M. P. PRASAD DR G. V. RAO (<i>Alternate</i>)
Consumer Guidance Society, Mumbai	DR A. R. SHENOY SHRI N. G. WAGLE (<i>Alternate</i>)
Food & Drugs Administration, Mumbai	SHRI A. RAMA KRISHNAN SHRI K. B. SHENDE (<i>Alternate</i>)
Food & Drugs Control Administration, Gandhinagar	DR B. N. PATEL SHRIMATI R. B. DESAI (<i>Alternate</i>)
Hindustan Lever Research Centre, Mumbai	SHRI V. R. DHANUKA SHRI N. S. BIJLANI (<i>Alternate</i>)
Hygienic Research Institute, Mumbai	SHRI M. B. DESAI SHRI MANISH K. CHHABRA (<i>Alternate</i>)
Impression Cosmetics, Faridabad	SHRIMATI SHASHI GUPTA SHRI M. K. GUPTA (<i>Alternate</i>)
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Lady Amritbai Doga College, Nagpur	DR (SHRIMATI) S. B. KULKARNI
Le'Oreal India Pvt Ltd, Umbergaon, Gujarat	SHRI R. JAYARAJ
Marico Industries Ltd, Mumbai	SHRI R. B. MOHILE SHRI BENEDICT M. (<i>Alternate</i>)
Mayar India Ltd, Delhi	DR S. ADHIKARI
Procter & Gamble (India), Mumbai	DR ARUN VISWANATH SHRIMATI SHWETA PURANDARE (<i>Alternate</i>)
Wyeth Lederle Ltd, Mumbai	SHRI M. V. BULBULE SHRI S. R. KULSHRESHTHA (<i>Alternate</i>)

(Continued from second cover)

and Type 2. The active dye content for Type 3 colours is specified in two parts: (a) an upper limit active matter as PPD content, percent by mass is fixed to allow only a safe dye in the market; and (b) Presence of dye ingredients (inclusive of lower or nil levels of PPD and/or phenylenediamine including their N-substituted derivatives and their salts, toluylenediamine and derivatives and their salts, other permissible dye intermediates, couplers and modifiers, aminophenols, resorcinols, and all permitted dye chemicals; and their derivatives) is considered essential in order to safeguard consumer's interest to enable him to get a dye that would perform and is money's worth.

Secondly, the specification on the residue on evaporation of the developer has been deleted in recognition of the latest technological developments in formulating developers using permissible fatty substances and emulsifiers.

Lastly, the requirement on the dye-ready-for-use has been modified by replacing the specification on the PPD content in the ready-to-use dye mixture (a metric derived by calculation using the dye-to-developer mixing ratio) with a specification based directly on the recommended dye : developer mixing ratio itself. This change simplifies the dye-ready-for-use specification and makes it uniform across the three types of dye classification, namely, Types 1, 2 and 3.

Assistance has been derived from J. Cosmetic Science 53, 43-58, Jan-Feb 2002 for estimation of oxidation hair dyes in cosmetic formulation.

There is no ISO Standard published by the International Organization for Standardization on the subject.

The composition of the Committee responsible for the formulation of this standard is given in Annex F.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ' Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Headquarters:

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